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Particle Accelerator Conference, 1997. Proceedings of the 1997, Volume: 2, May 1997

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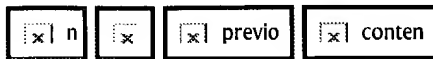
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## Controller Module

The *Controller Module* is based on a commercially available universal microcontroller module (**Micro-key 20CN592**, [3]) designed around the Philips **80C592** 8-bit microcontroller [2] running at a clock frequency of 16 MHz.

The microcontroller has an integrated CAN controller and the on-board CAN transceiver (Philips 82C250) provides an ISO/DIS-11898 standard CAN-bus interface.

The module offers 48 kByte of user application ROM (flash) and 63.5 kByte of RAM. This amount of memory is enough to build quite large applications. User application code can be downloaded through a serial port (standard) or optionally via the CAN-bus (a future option which could be very useful once the modules are integrated into an experiment); these features are provided by the onboard firmware delivered with the module.

The *Controller Module* also contains a multiplexer chip to enable connections to several *Sensor Modules*. One *Controller Module* may control up to about 16 *Sensor Modules* (**NB:** up to 8 in the current hardware/software implementation); a digital multiplexer-chip is used to switch the controller's serial interface I/O port to any of the connected *Sensor Modules*.

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